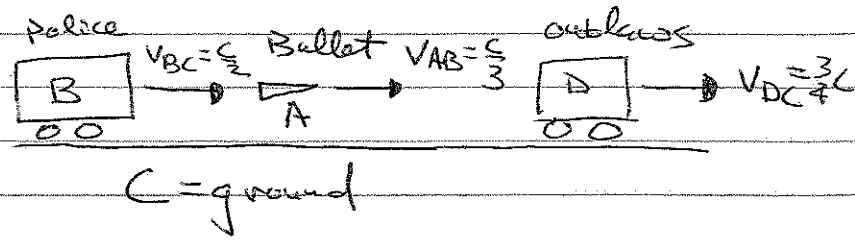


Solution to Problem 12.4



(a) According to Galileo
the bullet does hit

because $v_{AC} = v_{AB} + v_{BC} = \frac{5}{6}c > v_{DC}$

(b) However, according to Einstein the bullet does not hit

because
$$v_{AC} = \frac{v_{AB} + v_{BC}}{1 + \frac{v_{AB} \cdot v_{BC}}{c^2}} = \frac{\frac{5}{6}c}{1 + \frac{1}{6}} = \frac{5}{7}c < v_{DC}$$